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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,951	05/04/2005	Hajime Murakami	043888-0373	9619

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WASHINGTON, DC 20005-3096

EXAMINER

CHU, HELEN OK

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/533,951

Applicant(s)

MURAKAMI, HAJIME

Examiner

Helen O. Chu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments/Remarks has been received on October 23, 2006. Claim 3 has been amended
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action.

Claim Rejections - 35 USC § 103

3. The rejections under 35 U.S.C 103(a), on claims 1, 2 and 4 as being unpatentable over Nobuaki are maintained. The rejection is repeated below for convenience.
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1,2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuaki (JP Publication 3-297063).

In regard to claims 1, 2 and 4, the Nobuaki reference discloses a dipping treatment method for carbon rod in a manganese dry cell. The abstract describes paraffin wax consisting of 300-500 molecular weight base hydrocarbons and 35-60 molecular weight hydrocarbons are added (Abstract). The disclosure of the Nobuaki reference differs from the Applicant's claim in that the Nobuaki reference do not specify

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0.5 wt%. However, the Nobuaki reference does recognize that variations in weight percentage of the lower molecular weight of hydrocarbons will vary the viscosity of the wax and in turn effect impregnation of the wax (Page 340, Column 2, Paragraph 5). The higher in molecular percentage of the lower molecular weight hydrocarbons, the higher the viscosity, thus, the effect of the impregnation is lowered. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to choose the instantly claimed value through process optimization, since it has been held that the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable values involve only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980). It is known in the art that the carbon rod is a positive electrode current collector in a manganese dry cell..

6. The rejection under 35 U.S.C 103(a), on claim 3 as being unpatentable over Nobuaki in view of Yukifumi et al. is maintained. The rejection is repeated below for convenience.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuaki (JP Publication 3-297063) as applied to claims 1, 2 and 4 above, and further in view of Yukifumi et al. (JP Publication 07-272702).

The Nobuaki reference teaches the elements of claims 1, 2 and 4 as discussed in the previous rejection and incorporated herein but does not teach density of the carbon rod. However, the Yukifumi et al. reference teaches that carbon rod of high density is used so that it is hard and cushioning (Paragraph 7) is not an issue.

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of

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the invention to choose the instantly claimed value through process optimization, since it has been held that the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable values involve only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

8. The rejection under 35 U.S.C 103(a), on claims 5 as being unpatentable over Nobuaki in view of Yukifumi et al. and in further view of Kenichi et al. is maintained. The rejection is repeated below for convenience.

9.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuaki (JP Publication 3-297063) in view of Yukifumi et al. (JP Publication 07-272702) as applied to claims 1-4 above, and further in view of Kenichi et al. (JP Publication 05-290820).

The Nobuaki and the Yukifumi et al. reference teaches the elements of claims 1-4 as discussed in the previous rejections and incorporated herein but does not teach a polybutene substance as a sealant. However, the Kenichi et al. reference teaches a polybutene sealant substance would improve the sealing property during performance deterioration or high temperature storage (Abstract). Therefore, it would be obvious to one of ordinary skill at the time the invention was made to incorporate a polybutene sealant as taught by the Kenichi et al. reference into the manganese dry cell as taught by Nobuaki and Yukifumi et al. reference to prevent the manganese dry cell from liquid leakage.

It is noted that claim 2 is a product-by-process claim. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since the hydrocarbon of lower molecular weight is similar to that of the Applicant's, Applicant's process is not given patentable weight in this claim.

Response to Arguments

11. Applicant's arguments filed October 23, 2006 have been fully considered but they are not persuasive.

Applicant's principal arguments are

- a. *It is respectfully submitted that the Examiner's reliance on routine skill in the art to allege obviousness of the claimed features is a legal error. The "process optimization" basis for an obviousness rejection can only be relied upon by the Examiner if the prior art first recognizes the modified parameter as a result-effective variable.*
- b. *In the instant case, the cited prior art appears to be completely silent regarding amount of paraffin wax containing a hydrocarbon compound having a molecular weight of not greater than 310; so that there is no basis for alleging obviousness thereof on process optimization.*

c. *There is not suggestion in Nobuaki and Yukifumi et al. to substitute a paraffin wax containing a hydrocarbon compound having a molecular weight of not greater than 310 in an amount of not greater than 0.5 wt%, and a carbon rod with a density of 1.50-1.75 g/cm³, is into the positive electrode current collector of Nobuaki.*

d. *Kenichi et al. do not cure the deficiencies of Nobuaki and Yukifumi et al.*

e. *Claim 2 does not recite a method of forming the positive electrode current collector. Thus, claim 2 is not a product-by-process claim.*

In response to Applicant's arguments:

a. The Nobuaki et al. reference states on Page 340, Column 2 Paragraph, "if the weight percent is 15% or higher, viscosity would be too high and the temperature of impregnation treatment would require to be higher or the time would be longer because viscosity is increased the impregnation would not be sufficient unless the temperature of the treatment increases or time extension." The variations in viscosity which is related to the molecular weight would effect the impregnation of the wax; this is the process optimization variable.

Specifically, the process optimization variable is achieved in the range of higher than 0 wt% to less them 15 wt%. Therefore, it would have been obvious to one of ordinary skill to try a range starting from 0 wt% and increasing the weight percent each time to reach an upper limit in which the same process would be sustained.

b. The Nobuaki et al. reference teaches first a hydrocarbon of 300-500 molecular weight and a second hydrocarbon of 35-60 molecular weight (Abstract)

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with a wax. The second hydrocarbon of 35-60 molecular weight has a molecular weight less than 310.

c. The Yukifumi et al. reference teaches a carbon rod having high density is used so that it would be harder. It is well known to anyone skilled in the art that the higher the density the stronger it would be. Please refer to MPEP 2144 *Sources of Rationale Supporting a Rejection Under 35 U.S.C 103*, "Rational may be in reference, or reasoned from common knowledge in the art, scientific principles, art recognized equivalents, or legal precedent." It is common knowledge if one increased density of a component it would be harder which reinforces the disclosure of Yukifumi et al. Further as evidence by Nagasawa et al. (US Patent 4,157,317) when density is less than 1.6 g/cm^3 the carbon rod would not have a sufficient strength (Column 5, Lines 5-10). This would lead one of ordinary skill to try a value greater than 1.6 g/cm^3 or any values sufficient to obtain a carbon rod that would supply sufficient strength.

d. The Examiner does not believe Nobuaki et al. or the Yukifumi et al. reference are deficient in rejecting the Applicant's claims.

e. Claim 2 is a product-by-process claim because it incorporates "paraffin wax is measured by gas chromatography." Since the product of Nobuaki is the same as that of the Applicant's invention the process of measuring the paraffin wax with gas chromatography would not be given patentable weight.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen O. Chu whose telephone number is (571) 272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOC


TRACY DOVE
PRIMARY EXAMINER

1/07